## OVERVIEW

<table>
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<tr>
<th>Port</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>SD card reader</td>
</tr>
<tr>
<td>2</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>3</td>
<td>Kensington Security Slot</td>
</tr>
<tr>
<td>4</td>
<td>HDMI 2.0</td>
</tr>
<tr>
<td>5</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>6</td>
<td>Nano-SIM card slot *</td>
</tr>
<tr>
<td>7</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
<tr>
<td>8</td>
<td>Ethernet (RJ-45)</td>
</tr>
<tr>
<td>9</td>
<td>USB-C 3.2 Gen 1</td>
</tr>
<tr>
<td>10</td>
<td>2x USB-C 3.2 Gen 2 / Thunderbolt 3</td>
</tr>
<tr>
<td>11</td>
<td>Power connector</td>
</tr>
</tbody>
</table>

Notes:
- Ports with * are only available on selected models
PERFORMANCE

Processor

Processor Family
10th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® W Processor

<table>
<thead>
<tr>
<th>Processor Name</th>
<th>Cores</th>
<th>Threads</th>
<th>Base Frequency</th>
<th>Max Frequency</th>
<th>Cache</th>
<th>Memory Support</th>
<th>Processor Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core i5-10400H</td>
<td>4</td>
<td>8</td>
<td>2.6GHz</td>
<td>4.6GHz</td>
<td>8MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10750H</td>
<td>6</td>
<td>12</td>
<td>2.6GHz</td>
<td>5.0GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10850H</td>
<td>6</td>
<td>12</td>
<td>2.7GHz</td>
<td>5.1GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10875H</td>
<td>8</td>
<td>16</td>
<td>2.3GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i9-10885H</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.3GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i9-10980HK</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.3GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Xeon W-10855M</td>
<td>6</td>
<td>12</td>
<td>2.8GHz</td>
<td>5.1GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Xeon W-10885M</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.3GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
</tbody>
</table>

Operating System

Operating System
- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVIDIA® Quadro® RTX 3000</td>
<td>Discrete</td>
<td>6GB GDDR6</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA Quadro RTX 4000 Max-Q</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro RTX 5000 Max-Q</td>
<td>Discrete</td>
<td>16GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro T2000</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro T1000</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

Monitor Support

Monitor Support
Supports up to 5 independent displays via native display and 4 external monitors; supports external monitors via HDMI® (up to 4K@60Hz), USB-C (up to 4K@60Hz) or Thunderbolt™ (one supports up to 5K@60Hz and the other supports up to 4K@60Hz)

Chipset

Chipset
Intel WM490 chipset

Memory

Memory Type
- DDR4-2933 ECC
- DDR4-2933 non-ECC

Memory Slots
Four DDR4 SO-DIMM slots, dual-channel capable

Memory Protection
ECC on models with ECC DIMMs and Xeon processor

**Max Memory**
Up to 128GB

**Notes:**
1. Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation
2. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

**Storage**

**Storage Support**
Up to two drives, 2x M.2 2280 SSD
- M.2 2280 SSD up to 2TB each

**RAID**
RAID 0/1 support

**Storage Type**

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>-</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

**Removable Storage**

**Optical**
None

**Card Reader**
SD card reader

**Multi-Media**

**Audio Chip**
High Definition (HD) Audio, Realtek® ALC3286 codec

**Speakers**
Stereo speakers, Dolby® Atmos® sound system

**Microphone**
- Dual array microphone, far-field
- No microphone

**Camera**
- 720p, with ThinkShutter, fixed focus
- IR & 720p, with ThinkShutter, fixed focus
- No camera

**Battery**

**Battery**
Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

**Max Battery Life**
- MobileMark® 2014: 16.4 hr
- MobileMark 2018: 10.3 hr
- JEITA 2.0: 17.4 hr

**Notes:**
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

**Power Adapter**

**Power Adapter**
- 170W slim tip AC adapter (2-pin)
- 170W slim tip AC adapter (3-pin)
ThinkPad P15 Gen 1

- 230W slim tip AC adapter (3-pin)

**DESIGN**

**Display**

<table>
<thead>
<tr>
<th>Size</th>
<th>Resolution</th>
<th>Touch</th>
<th>Type</th>
<th>Brightness</th>
<th>Surface</th>
<th>Aspect Ratio</th>
<th>Contrast Ratio</th>
<th>Color Gamut</th>
<th>Viewing Angle</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>500 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1200:1</td>
<td>72% NTSC</td>
<td>160°</td>
<td>Dolby Vision™, HDR</td>
</tr>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>700:1</td>
<td>72% NTSC</td>
<td>160°</td>
<td>-</td>
</tr>
<tr>
<td>15.6”</td>
<td>UHD (3840x2160)</td>
<td>Multi-touch</td>
<td>OLED</td>
<td>SDR 400nit, HDR 500nit (peak)</td>
<td>Anti-reflection Anti-smudge</td>
<td>16:9</td>
<td>100000:1</td>
<td>100% DCI-P3</td>
<td>170°</td>
<td>Dolby Vision, HDR</td>
</tr>
<tr>
<td>15.6”</td>
<td>UHD (3840x2160)</td>
<td>None</td>
<td>IPS</td>
<td>600 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1400:1</td>
<td>100% Adobe® RGB</td>
<td>178°</td>
<td>Dolby Vision, HDR</td>
</tr>
</tbody>
</table>

**Color Calibration**

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

**Touchscreen**

- On-cell touch, supports 10-point touch
- Non-touch

**Notes:**
1. California Electronic Waste Recycling Fee
   In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
   For more information, go to https://www.cairecycle.ca.gov/Electronics/Consumer
2. For non-OLED display, HDR is only supported under hybrid mode

**Input Device**

**Pen**
- Lenovo Pen Pro (for UHD OLED models)
- None

**Keyboard**

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

**Keyboard Backlight**

LED backlight

**UltraNav™**

3-button TrackPoint® pointing device and 2-button Mylar® surface multi-touch touchpad

**Mechanical**

**Dimensions (WxDxH)**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch models</td>
<td>375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches)</td>
</tr>
<tr>
<td>Non-touch models</td>
<td>375.4 x 252.3 x 24.5-31.45 mm (0.96-1.24 inches)</td>
</tr>
</tbody>
</table>

**Weight**

2.74 kg (6.05 lbs)

**Case Color**

Black

**Case Material**
CONNECTIVITY

Network
Onboard Ethernet
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth™
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- Wireless WAN upgradable
- Not Support

SIM Card
No SIM card

NFC
Not support

Ports

Standard Ports
- 2x USB 3.2 Gen 1 (one Always On)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports
- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN models)

Notes:
1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
   - USB 2.0: 480 Mbit/s
   - USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s
   - USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s
   - USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s
   - Thunderbolt 3: 40 Gbit/s
   - FireWire 400: 400 Mbit/s
   - FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security
Security Chip
- Discrete TPM 2.0, TCG certified
• Firmware TPM 2.0 integrated in chipset
  • Disabled (in some regions)

Physical Locks
Kensington® Security Slot

Smart Card Reader
• Smart card reader
  • No smart card reader

Fingerprint Reader
Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security
• Power-on password
  • Supervisor password
  • Hard disk password
  • Self-healing BIOS

Other Security
• (Optional) ThinkShutter camera cover
  • (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management
System Management
• Intel vPro Technology, DASH
  • None

SERVICE

Warranty
Base Warranty
• 1-year depot service
  • 1-year limited onsite service
  • 1-year depot with 2-year system board service
  • 1-year + 2-year depot service
  • 1-year + 2-year limited onsite service
  • 3-year (1-yr battery) depot service
  • 3-year (1-yr battery) limited onsite service
  • No base warranty

ACCESSORIES

Bundled Accessories
Bundled Accessories
None

CERTIFICATIONS

Green Certifications
Green Certifications
• EPEAT™ Gold
  • ENERGY STAR® 8.0
  • RoHS compliant

Other Certifications
Mil-Spec Test
MIL-STD-810G military test passed

**ISV Certifications**

Please visit www.thinkworkstations.com/isv-certifications/